



Federated Giovanni: A Distributed Web Service for Analysis and Visualization of Remote Sensing Data

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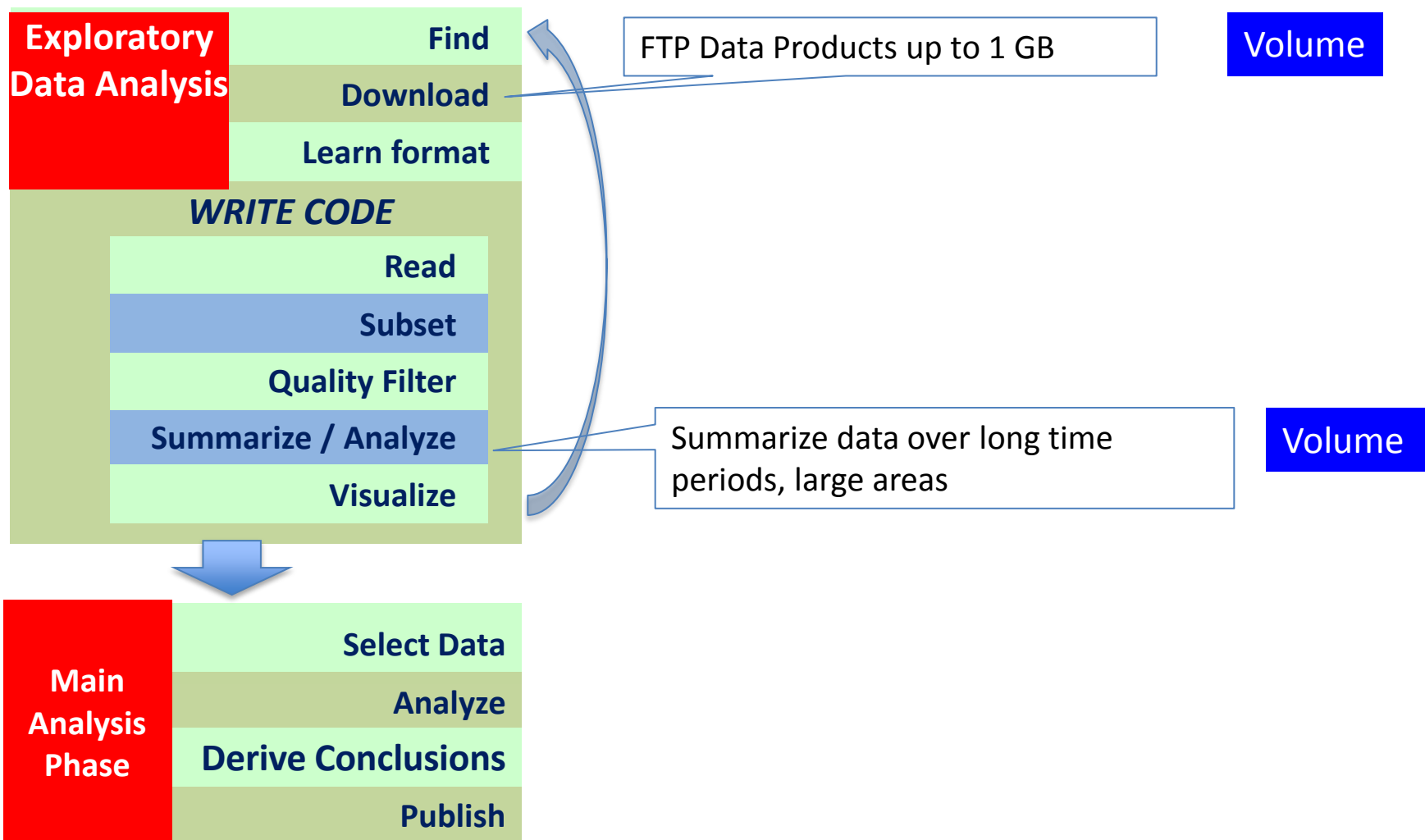


Outline

- Overview of Giovanni
- Federated Giovanni
- Current Status and Future Plans

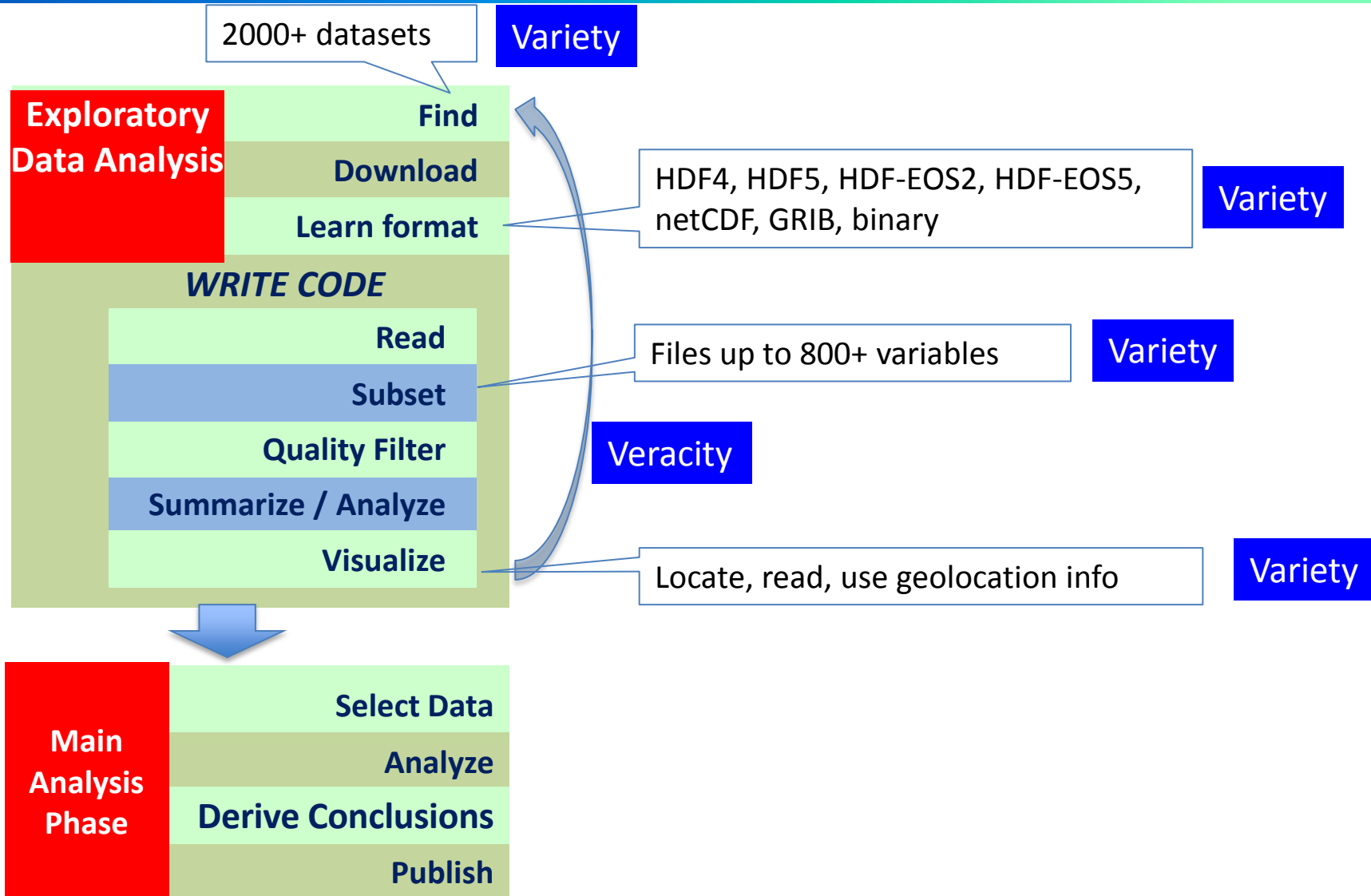


Big Earth Science Data: Why So Difficult?



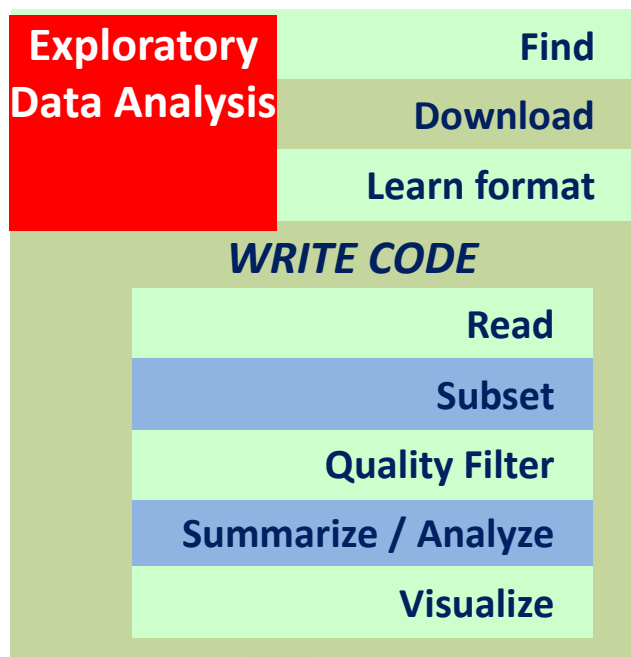


Big Earth Science Data: Why So Difficult?



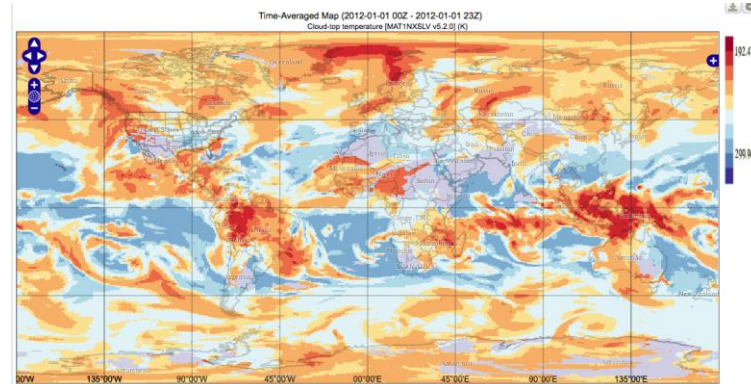
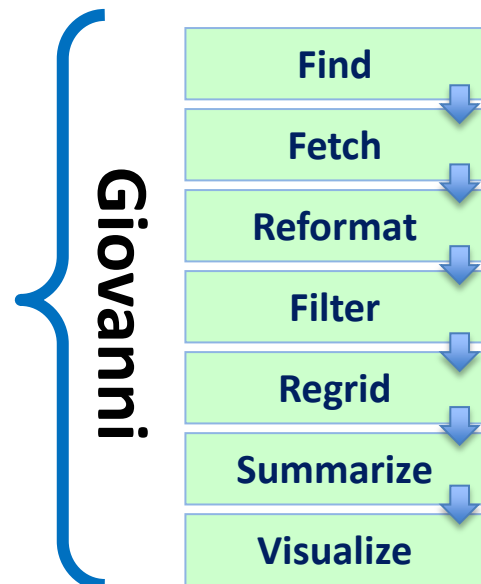


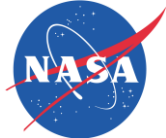
Giovanni provides (relatively) rapid exploration of datasets



Giovanni provides
*Server-Side,
Quick-Start
Exploratory Data
Analysis:*
no coding necessary
no downloads necessary

Web-based Services





Giovanni User Interface

Giovanni The Bridge Between Data and Science v 4.11 [Release Notes](#) [Browser Compatibility](#) [Known Issues](#)

Error in the content of AOD dust 550 nm GOCART model data prior to June 7, 2013... [1 of 1 messages] [Read More](#)

Select Plot

☒ **Maps: Time-Averaged** ☐ Comparisons: *Select...* ☐ Time Series: *Select...* ☐ Vertical: *Select...* ☐ Miscellaneous: *Select...*

Select Date Range (UTC)

YYYY-MM-DD

2014 -09 -01 00 hrs to 2014 -11 -30 23 hrs

Valid Range: 2002-07-04 to 2014-12-02

Select Region (Bounding Box or Shapefile)

Format: West, South, East, North

-44.2969, -5.625, 20.3906, 30.2344 [Show Map](#) [Show Shapes](#)

Select Variables

Disciplines

☐ Aerosols (52)

Measurements

- ☐ Aerosol Index (1)
- ☐ Air Pressure (4)
- ☐ Air Temperature (14)
- ☐ Albedo (5)
- ☐ Altitude (4)
- ☐ Angstrom Exponent (16)
- ☐ Atmospheric Moisture (20)
- ☐ CH4 (4)
- ☐ CO (4)
- ☐ Cloud Fraction (4)
- ☐ Cloud Properties (9)
- ☐ Component Aerosol Optical Depth (16)
- ☐ Evapotranspiration (1)
- ☐ Geopotential (4)
- ☐ Latent Heat Flux (1)
- ☐ OLR (8)
- ☐ Ozone (4)
- ☐ Precipitation (6)
- ☐ Sensible Heat Flux (1)
- ☐ Soil Moisture (6)
- ☐ Statistics (28)
- ☐ Surface Runoff (1)
- ☐ Surface Temperature (4)
- ☐ Total AOD Climatology Anomaly (6)
- ☒ Total Aerosol Optical Depth (52)
- ☐ Wind Stress Direction (1)
- ☐ Wind Stress Magnitude (1)

Platform / Instrument

Wavelengths

Spatial Resolutions

Number of matching Variables: 52 of 225

Total Variable(s) included in Plot: 2

Keyword: [Search](#) [Clear](#)

	Variable Name	Source	Temp. Res.	Spat. Res.	Begin Date	End Date	Vert. Slice
<input type="checkbox"/>	Aerosol Optical Depth 550 nm (Dark Target) (MOD08_D3 v051)	MODIS-Terra	Daily	1 °	2000-03-01	2014-12-07	-
<input type="checkbox"/>	Aerosol Optical Depth 550 nm (Deep Blue, Land-only) (MOD08_D3 v051)	MODIS-Terra	Daily	1 °	2000-03-01	2007-12-31	-
<input checked="" type="checkbox"/>	Aerosol Optical Depth 550 nm (Dark Target) (MYD08_D3 v051)	MODIS-Aqua	Daily	1 °	2002-07-04	2014-12-02	-
<input checked="" type="checkbox"/>	Aerosol Optical Depth 550 nm (Deep Blue, Land-only) (MYD08_D3 v051)	MODIS-Aqua	Daily	1 °	2002-07-04	2014-12-02	-
<input type="checkbox"/>	Aerosol Optical Depth 388 nm (OMAERUVd v003)	OMI	Daily	1 °	2004-10-01	2014-12-06	-
<input type="checkbox"/>	Aerosol Optical Depth 500 nm (OMAERUVd v003)	OMI	Daily	1 °	2004-10-01	2014-12-06	-
<input type="checkbox"/>	Aerosol Optical Depth 555 nm (MIL3DAE v4)	MISR	Daily	0.5 °	2000-02-25	2014-08-31	-
<input type="checkbox"/>	Aerosol Optical Depth 550 nm (Dark Target) (MOD08_M3 v051)	MODIS-Terra	Monthly	1 °	2000-03-01	2014-11-30	-
<input type="checkbox"/>	Aerosol Optical Depth 550 nm (Deep Blue, Land-only) (MOD08_M3 v051)	MODIS-Terra	Monthly	1 °	2000-03-01	2007-12-31	-
<input type="checkbox"/>	Aerosol Optical Depth 550 nm (Deep Blue, Land-only) (MYD08_M3 v051)	MODIS-Aqua	Monthly	1 °	2002-07-04	2014-11-30	-
<input type="checkbox"/>	Aerosol Optical Depth 550 nm (Dark Target) (MYD08_M3 v051)	MODIS-Aqua	Monthly	1 °	2002-07-04	2014-11-30	-
<input type="checkbox"/>	Aerosol Optical Depth 550 nm (SWDB_L305 v004)	SeaWiFS	Daily	0.5 °	1997-09-03	2010-12-11	-
<input type="checkbox"/>	Aerosol Optical Depth 550 nm (Land-only) (SWDB_L305 v004)	SeaWiFS	Daily	0.5 °	1997-09-03	2010-12-11	-
<input type="checkbox"/>	Aerosol Optical Depth 550 nm (Ocean-only) (SWDB_L305 v004)	SeaWiFS	Daily	0.5 °	1997-09-03	2010-12-11	-
<input type="checkbox"/>	Aerosol Optical Depth 550 nm (SWDB_L310 v004)	SeaWiFS	Daily	1 °	1997-09-03	2010-12-11	-
<input type="checkbox"/>	Aerosol Optical Depth 550 nm (Land-only) (SWDB_L310 v004)	SeaWiFS	Daily	1 °	1997-09-03	2010-12-11	-

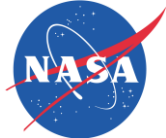
[Help](#)

[Reset](#)

[Feedback](#)

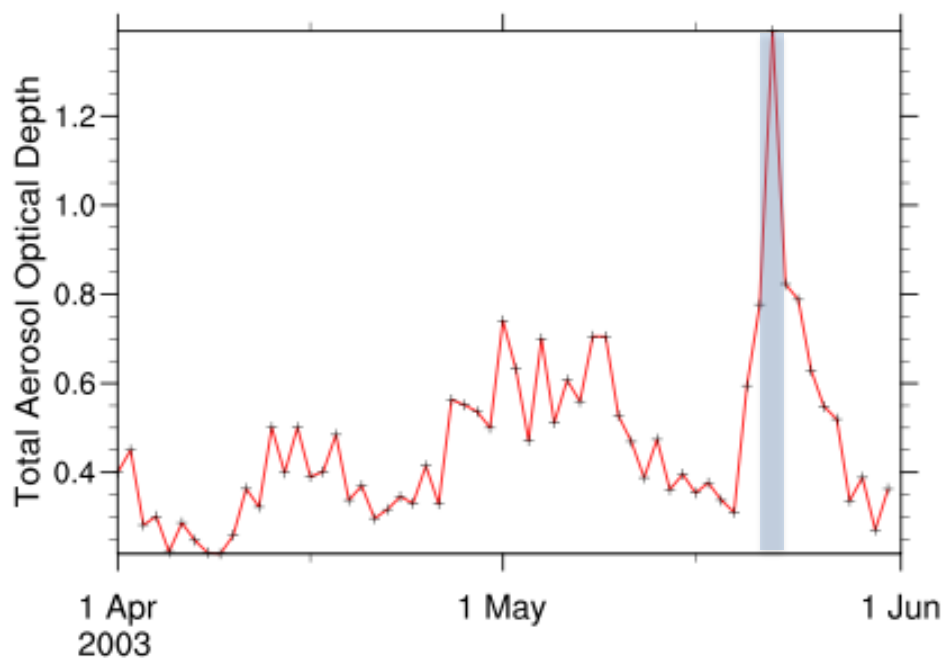
[Plot Data](#)

[Go to Results](#)

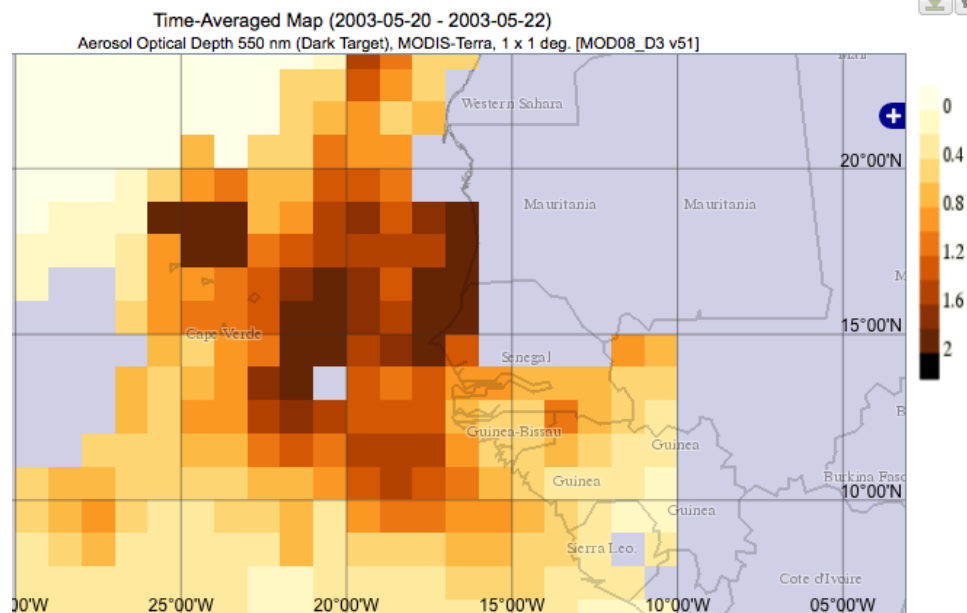


Example: Exploring in Time and Space

MOD08_D3 v51 Area-Averaged Time Series
2003-04-01 - 2003-05-31, Region 30W, 5N, 10W, 25N



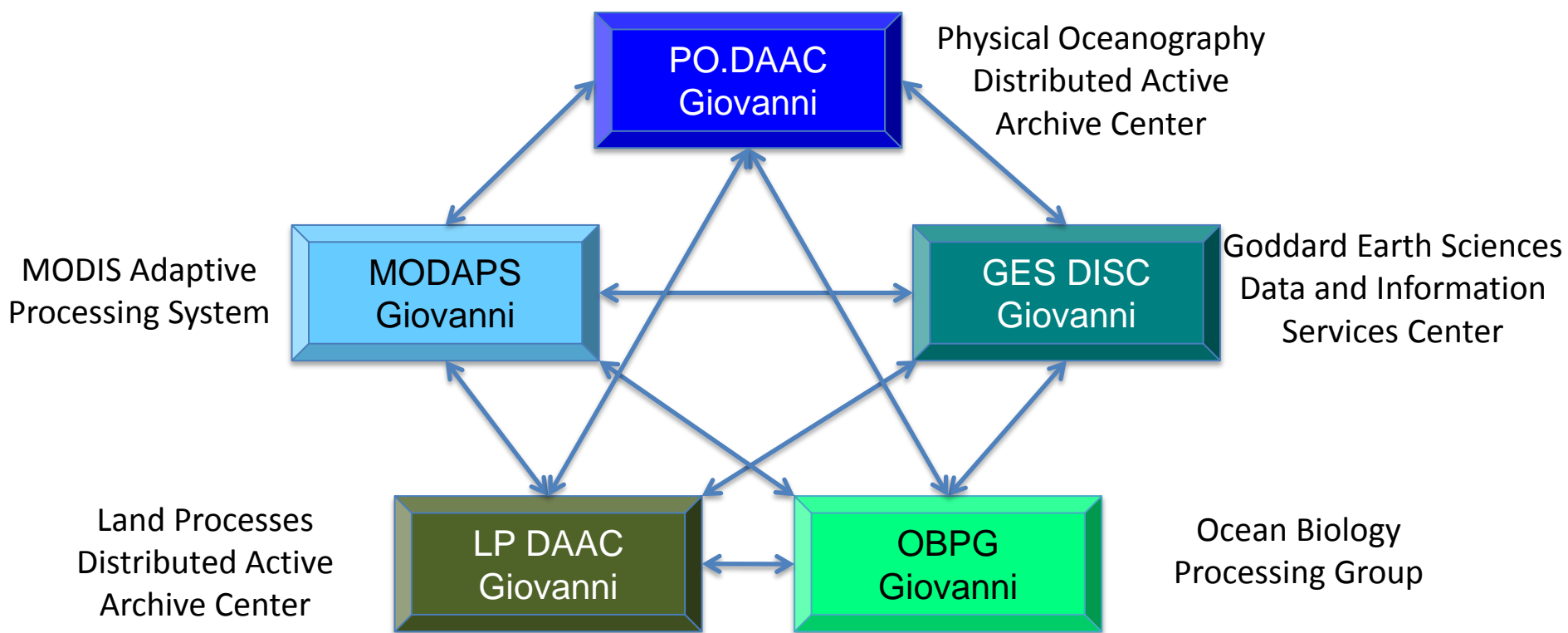
Time Averaged Map 20-22 May

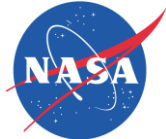




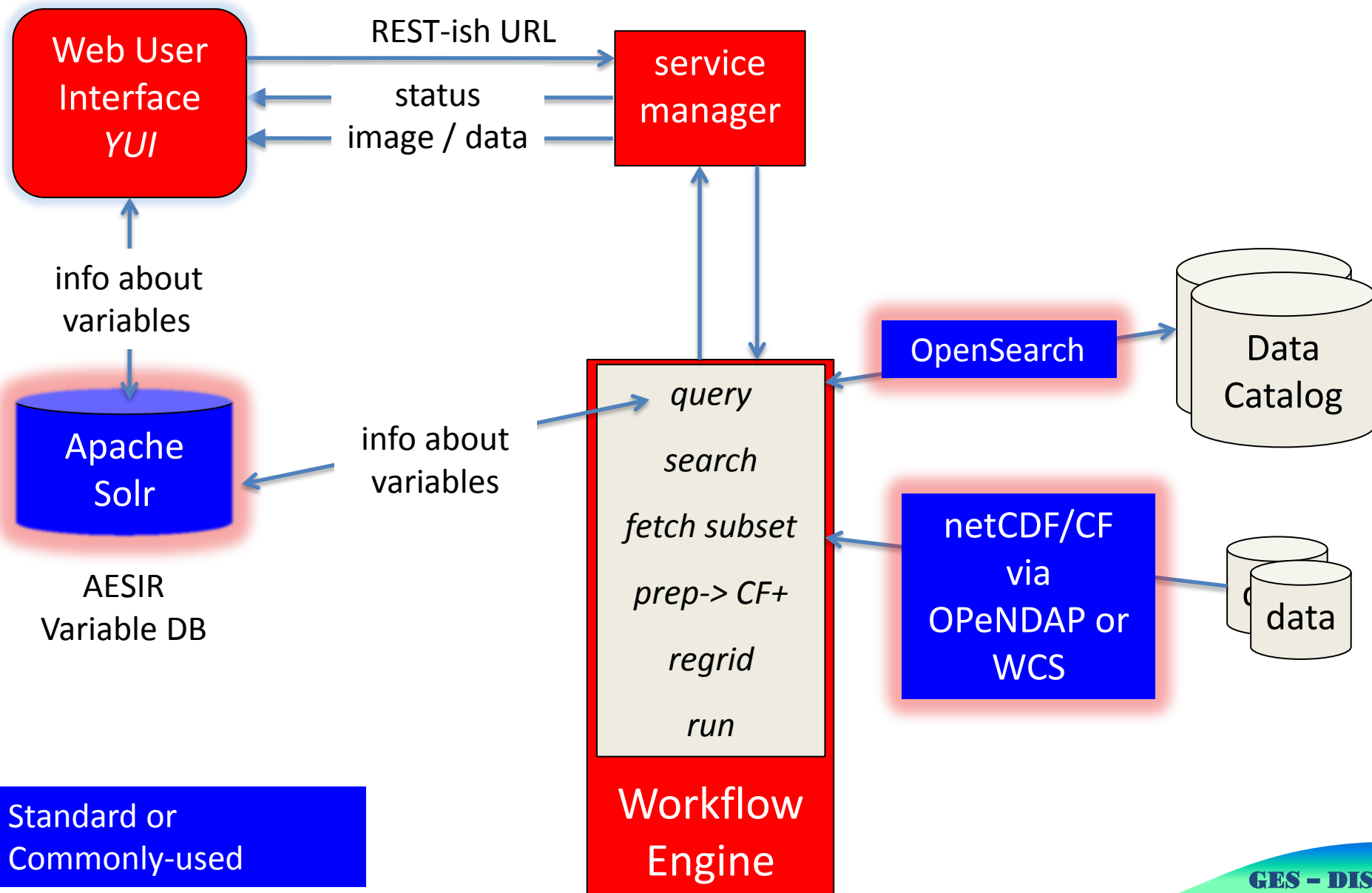
Federated Giovanni will increase the availability of data in Giovanni

Ongoing now: Funded by NASA-ACCESS: 2014-2016





Giovanni-4 Architecture

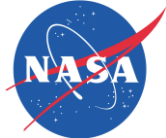




3 Tiers of Federation

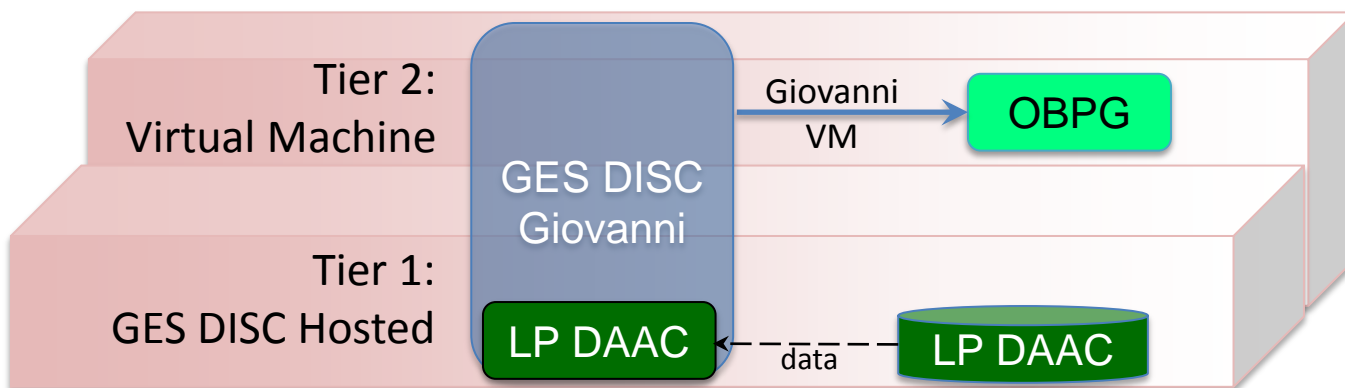
Giovanni will be sharable as a “Hosted Service” (Tier 1)





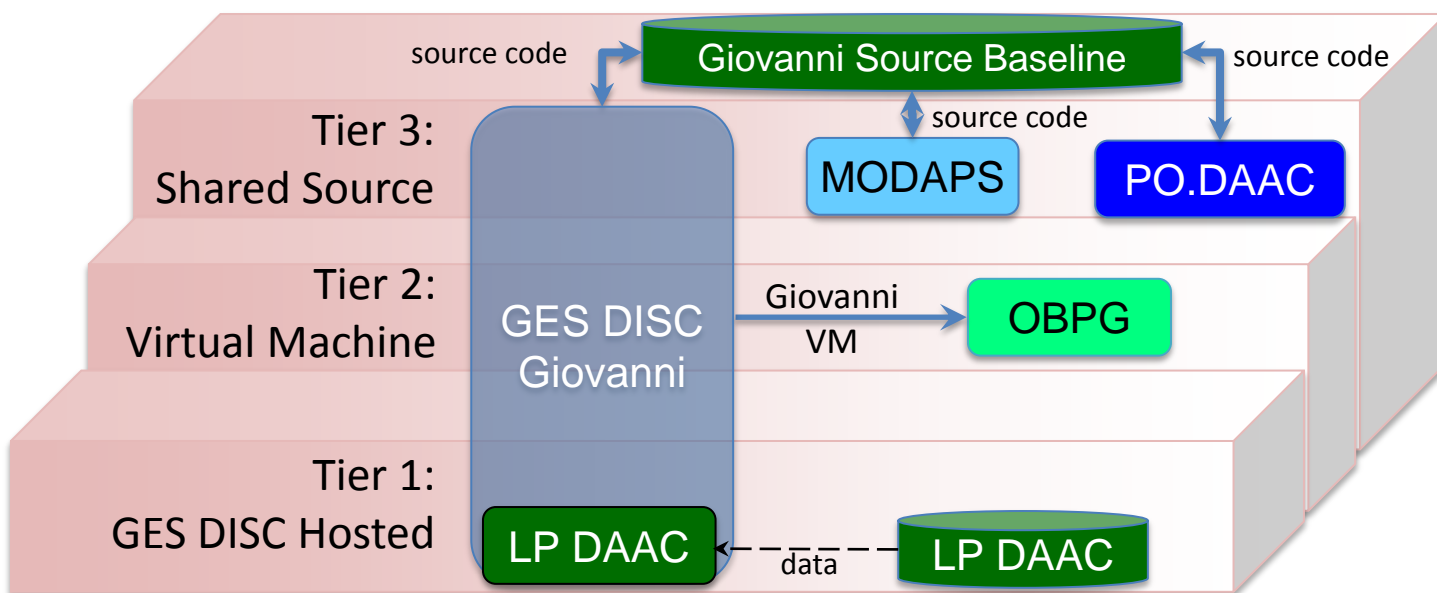
3 Tiers of Federation

Giovanni will be sharable as a Virtual Machine





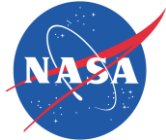
3 Tiers of Federation



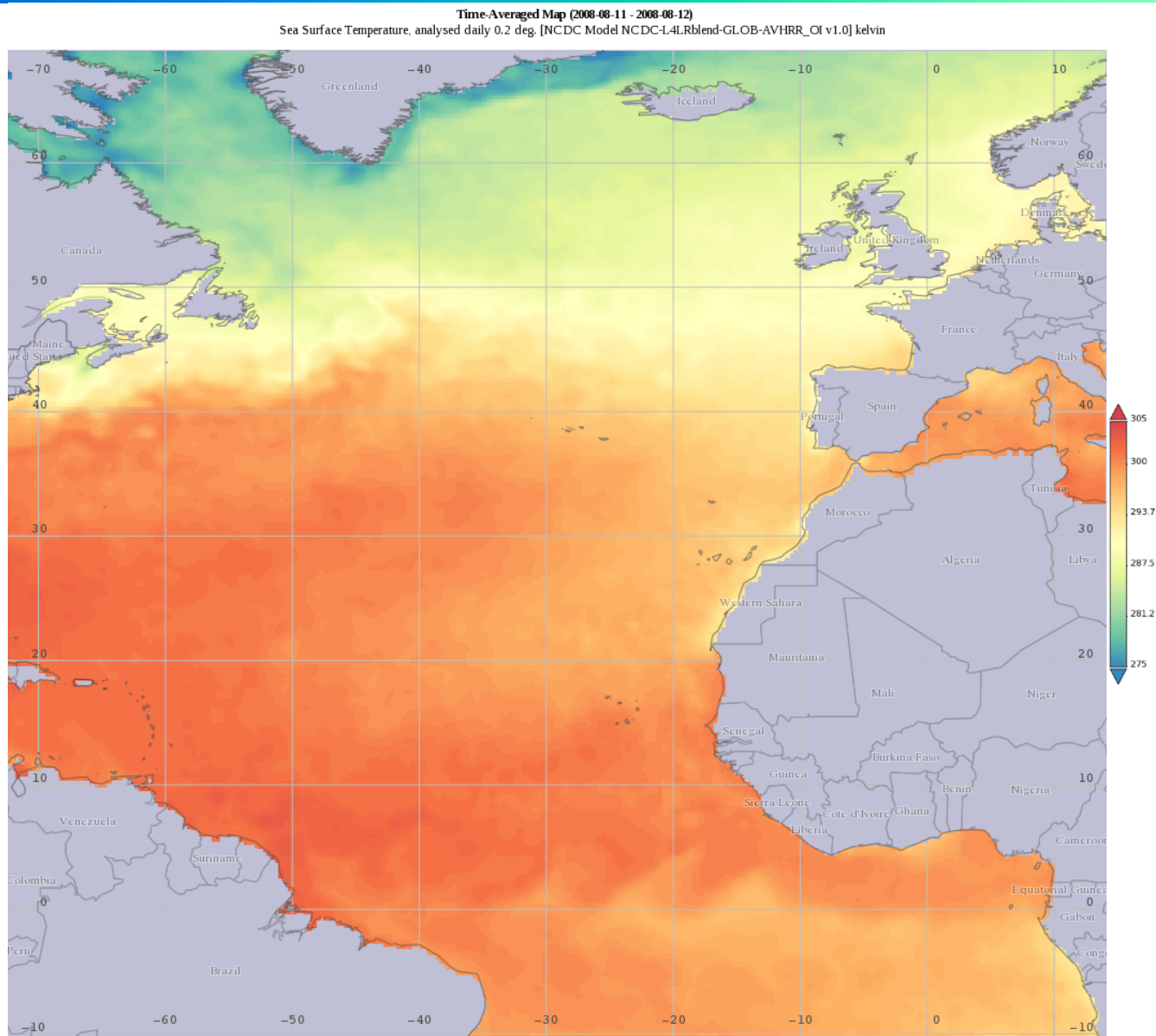


Status and Future Plans

- Tier 1 (GES DISC Hosted) Prototyped



Sea Surface Temperature from Physical Oceanography DAAC



- Selected date range was 2008-08-12 - 2008-08-12. Title reflects the date range of the granules that went into making this result.





Status and Future Plans

- Tier 1 (GES DISC Hosted) Prototyped
- Tier 2 Virtual Machine underway
 - Prototype expected in February 2015
- Open Source Release in 2015*